The Socially Oriented and Individually Oriented Achievement Motivation of Singaporean Chinese Students

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Two hundred and seventeen male (45%) and female (55%) Singaporean Chinese secondary school students (mean age = 16) were surveyed with the Work and Family Orientation Scale (WOFO) (Helmreich & Spence, 1978) designed to measure the intrinsic motivation to achieve and the Individual-oriented and Social-oriented Achievement Motivation Scale (IOAM-SOAM) (Yang & Yu, 1988), a culture-specific measure of the Chinese achievement tendencies. A causal model was tested to explore the relationships between the different dimensions of WOFO and IOAM-SOAM. The best-fit model indicated that there were two paths: a task-related path and a social-related path between the intrinsic motives to achieve and the culturally specific measure of achievement tendencies. The task-related dimensions of WOFO, mastery and work ethics lead to IOAM

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and the ego-related dimension, competition leads to SOAM. The Chinese
definition of success — individual competence in socially recognized projects is cited as the cultural factor that shapes the manifestations of the basic motive to achieve in a multifaceted way.

Since McClelland’s (1961) seminal work on culture and achievement, there has been intense interest and debate on achievement motivation in different cultural contexts. The critical question concerning achievement motivation in the collective context seem to be whether in cultures where the collective is emphasized the individuals have the same kind of intrinsic motives to achieve? In addressing this question, the motivation to achieve is often defined as the traditional literature on achievement, as the individual’s motive to quest for mastery over the environment (Murray, 1938). In other words, the focus of the enquiry is in the dispositional factor — the drive of the individual toward mastery — involved in the achievement phenomenon. In order to accept the possibility that individuals in the collective context might be low on the motivation to achieve, one might have to accept the assumptions that (1) the motivation to achieve and the motivation to affiliate are necessarily at odds with each other and (2) that individual achievement and the collective goals are at each other’s expenses. We contend that these assumptions are not always true in the Chinese cultural context. We argue that in the Chinese context, individual achievement in terms of mastery in academic settings serves both the need for the task oriented motivations as well as the social oriented motivations. In the academic settings, individual Chinese might approach achievement via both the individually oriented and the socially oriented goal conceptualizations and behavioral scripts. In this paper, we attempted to address this issue by adopting a process approach towards the Achievement phenomena found in the contemporary studies on achievement (for instance, Ames, 1992). In other words, we propose to study the Chinese achievement process by separating the intrinsic motivation to achieve, or the “energizer” in McClelland’s (1984) terminology, from the behavioral scripts believed to lead to achievement, or “tendency to achieve success (Ts)” in Atkinson’s (1964) formulation.

The Achievement Process: A Multi-Staged and Multifaceted Approach

We adopted the approach to achievement by Ames (1992) that is to view achievement neither as one entity nor a single process but as a multi-staged and multifaceted process. This multiple staged process was first outlined by Deci (1975). Deci’s model (1975, p. 94) postulates the following sequence of events: energy source (motivation to achieve) → goals (achievement goal conceptualization) → behavior (behaviors instrumental to goal attainment or tendency to achieve toward success). In other words, the motivation to achieve provides the energy source, however, the motive by itself does not have a specific direction for achievement related behaviors; it is the beliefs of the individual that shape the conceptualization of achievement related goals. Finally, the manifested behaviors are in turn guided by the goal conceptualizations.

This model has been used to address the controversy concerning the influence of values and cultures in achievement. McClelland (1984) maintained that at the level of the basic motivation, the achievement motives are similar across cultures; culture differences however could be found at the level of goal conceptualization and the level of actual manifestation of the basic motive. This argument is supported by literature in developmental research: Hunt (1971) postulated that at birth the motivation for competence and mastery is undifferentiated, that is, not directed toward any specific goals. As the individual grows older, he/she develops a view of his/her world containing certain values and beliefs. These values and beliefs about the self and the world then contribute to her conceptualization of achievement goals and the related goal directed achievement behaviors. Culture’s values and beliefs are believed to help shape the individual’s cognitive representations of achievement goals and goal directed behaviors (Deci, 1975; McClelland, 1984). In other words, according to these authors, cultures influence the basic motivation for mastery and competence at the level of its goal conceptualizations and behavioral manifestations.

Based on this thesis, we proposed to approach the achievement phenomenon in the Chinese context by adopting the multi-stage, multifaceted approach: Stage one involves the basic motivation to achieve; stage two includes goal conceptualization and goal-directed scripts of instrumental behaviors. We hypothesized that the social oriented nature of Chinese achievement (Yang & Yu, 1988; Yu, 1991) is manifested at the second stage, that is, in the conceptualization of achievement goals and the goal directed action scripts.

This hypothesis is based on our understanding of the Chinese culture and its related values. The values of the Chinese places a high demand on
This achievement-in-collective conceptualization of success of the Chinese, originates from the same basic source as the most important objective in parent’s expectations (Yang, 1986). In most Western cultures, an individual’s success is often defined as performance excellence in achievement goals chosen on the basis of the individual’s own aspiration. Contrary to this individually oriented notion, achievement to the Chinese serves a dual function, realization of the individual’s aspiration and gaining societal approval (Yang & Yu, 1988). To meet this dual demand, the Chinese often choose to excel in projects, in other words, achievement goals, normatively defined by the society. In other words, for the individual Chinese, achievement is defined as individual reaching success within the collective context (Tu, 1985) for the collective and often in collaboration with others, in the collective (Yang & Yu, 1988; Yu, 1991). In other words, for the Chinese, an individual’s achievement is not achievement in isolation but achievement in collective. This achievement-in-collective conceptualization of success of the Chinese, according to Yang and Yu (1988) gives rise to the dual conceptualization of the Socially Oriented Achievement Motivation (SOAM) as well as the Individually Oriented Achievement Motivation (IOAM). In this paper, we attempt to show that this dual process of achievement, considered characteristic of the Chinese, originates from the same basic source motivation, individual’s quest for mastery and competence, as that found in Western populations.

**Duality of Human Motives**

Murray’s (1938) original definition of the motivation to achieve, being a desire for performance excellence and to acquire mastery and individual competence, is considered a task-related motive. However, the task-oriented motives and the person-oriented motives are not easily separable. Bakan (1966) postulated that there is a dual sense of self: the agentic-task oriented, and the communion-person oriented. These two fundamental but antagonistic senses of the self were observed to interact with each other; the interaction would bear fundamental influence on the motive to achieve. The resultant effect is observed in the individual’s selection of goals for achievement and the actual manifestations of the motive. Extrapolating this beyond the individual, Spence (1985) further postulated that different societies find different collective solutions to manage these two senses of self-related to the motivation to achieve and the motivation for affiliation.

These different modes of solutions may shape and guide the individual’s motivation to achieve in the socially oriented or the individually oriented achievement goals or successes. More specifically, in cultures where the communion sense of self prevails, that is, in cultures where the collective is emphasized, achievement motivation might be manifested in ways that serve the collective (De Vos, 1973; Maehre, 1974; Spence, 1985). For instance, Ramirez and Price-Williams (1976) found that Blacks and Mexican Americans scored higher on achievement motivation operationalized in terms of family oriented achievement goals. Likewise, Gillmore, Boggs, and Jordan (1974) found that young Hawaiians expressed their motives to achieve in goals, depending on the subculture, with varying degrees of social emphasis. Influence of the different emphasis on the collective on achievement motives can also be found in American subcultures: A more recent study by American researchers, Oyserman, Ager and Grant (1995) found that while individualism predicts achievement behaviors of American White students, collectivism predicts achievement behaviors of African American students. In contrast to White Americans, for African Americans, individual’s striving toward achievement is supported by a sense of the interconnectedness within the community. The seminal work of De Vos (1973) in socialization and achievement in the Japanese further illustrates how worldviews and self-other relations mould the conceptualization of achievement in this highly collectivist context. Contrary to the Western emphasis on “individuation” as a pre-requisite to achievement (McClelland, 1961), within the Japanese society, individual achievement motivation develops in conjunction with the recognition of interdependence as the individual’s destiny. To reconcile the dual demand for achievement and interdependence, the Japanese, like the Chinese learn to achieve — within and with — the collective. Achievement on the part of the individual becomes a social/community event. As early as 1956, Caudill and De Vos presented the argument that the cultural tradition of Japan, albeit with a heavy collective emphasis, was responsible for perpetuating a strong motivation to achieve. In this analysis, Caudill and De Vos (1956) analyzed the motivation structure behind Japanese and Japanese American achievement as one in which the person-oriented motives and the task-oriented motives intimately interact with each other.

Recent research in culture and self has provided a theoretical framework that helps to understand the culture-achievement relationships (Markus & Kitayama, 1991). The motivation to achieve is an integral
part of the self-system that regulates the selection of goals and goal directed behaviors of the individual. The make-up of the self-construal was proposed to “frame” the directions of the individual’s achievement related behaviors. Markus and Kitayama proposed that the conceptualization of achievement goals mirrors the facets of the self; if the self is multifaceted so would be the achievement goals. In most cultures, the independent as well as the interdependent self are both facets of the self-construal. The multifaceted nature of the self-construal is reflected in the multifaceted nature of achievement goals and both are considered products of the culture. Niles (1998) examined the achievement goals and means in the Anglo Australian culture as well as those in the Sri Lankan culture. The results reflected both individual-oriented and group oriented goals and means and in both cultures. The Australian results showed higher emphasis on the individual goals and means and Sri Lankan results showed higher emphasis on the group oriented goals and means. However, the motivation to achieve in both cultures include both the social ego-oriented and the task oriented motives. Self-construal of the Chinese in Singapore (Chang & Lee, 2000) has been found to involve both independence as well as interdependence. Following these arguments, we hypothesized that the tendency toward success of Singaporean Chinese students, in line with their self-construction, would involve both the task-oriented and the social-oriented motives.

The integration of both the communal needs and the mastery needs in the Chinese can be seen in the empirical findings in the relationships between basic motives: Yu (1974) reported that the strength of achievement motivation was correlated positively with filial piety. Ang and Chang (1999) in Singapore also found that the motivation to achieve and the motivation for affiliation are positively correlated with each other in the Chinese youth. These positive correlations suggest that within the Chinese community, individual’s striving toward achievement is not seen as incompatible with individual’s striving toward social approval. With this dual emphasis of both the individual as well as the collective, a happy medium for the Chinese would be provided by achievement goals that could integrate both the individual’s task oriented achievement as well as the person oriented communion needs. Achievement and achievement related behaviors in the Chinese cultural context thus serve a dual function for both the individual and the collective. This is exactly what De Vos (1973) had found in the Japanese society and Yang (1986) found in the Chinese society.

Success: Achievement Goals in the Chinese Cultural Context

Thus in the Chinese society, social recognition and task-mastery are intertwined. Confucius maintained that in an ideal society, positions of power and recognition should be distributed on the basis of individual merits defined as mastery of skills and knowledge; individual’s learning thus serves the dual purpose of serving the self as well as the collective (de Bary, 1991). The age-old civil servants examination further institutionalized this belief and the actual practice of the path to success: That power prestige an or fortune can be attained through individual mastery. Task related motives can thus be seen as intimately related to satisfaction of socially related needs.

The individual oriented achievement motivation proposed by Yang and Yu (1988) mainly focuses on how the individual approaches the task by him/herself, while their socially oriented achievement motivation focuses mainly on attaining performance goals in relation to social norms and self-other comparison. In other words, the dichotomized achievement model proposed by Yang and Yu correctly captures the Chinese definition of success, one that involves individual competence and the social orientation in goal conceptualization, performance evaluation and social comparison. Following our earlier discussion, we hypothesized that the social-oriented and the individual-oriented motivation to achieve might be positively correlated to each other (hypothesis 1).

Motives, Goals and the Striving to Achieve Success

We propose to extend the Yang and Yu (1988) model by analyzing the Chinese achievement syndrome at two levels: at the level of the motivation and at the level of the goal conceptualization.

Reading the content of Yang and Yu’s (1988) Individual-oriented and Social-oriented Achievement Motivation Scale (IOAM and SOAM), we interpreted the IOAM and SOAM as two achievement related behavioral scripts; they are similar to the tendency for success-goal directed behavioral scripts, proposed by Atkinson (1964) — the socially oriented way and the individual oriented ways to achieve success. It follows that a basic motivation to achieve, a quest for competence and mastery, might be a contributor to both the socially oriented and the individually oriented achievement behaviors.
To test this hypothesis, we have to identify a cross-culturally valid measure. We conducted extensive literature survey as well as an indepth ethnographic study (Ong, 1995) to identify the culturally conditioned meanings or goal conceptualization of achievement. As we had hypothesized the construals of achievement in Singapore are task mastery and individual competence in socially recognized areas; the motivation to achieve, according to these Singaporean students would be the tendencies to work hard and to master the task in order to reach the goals identified by the socially sanctioned success. For majority of the students, "being a good student by achieving high marks" is the goal of achievement. In turn, "high marks" mean "doing better than your peers." In terms of actions leading to high marks, these students reported that they believed that high marks can only be achieved through "mastery" — understanding of materials taught in school; however, "mastery, according to these students can be achieved through "hard working." This ethnographic report provided a glimpse into the goal conceptualization, task mastery in social context to perform better than others, as well as the internalized "action scripts" of achievement striving of Singaporean students, work hard for task mastery.

Our literature review effort yielded a measure: Work and Family Orientation (WOFO) (Helmreich & Spence, 1978; Spence & Helmreich, 1983) which operationalizes the basic motivation to achieve into three related dimensions: mastery, competitiveness or competition, and work ethics. Through extensive validation effort, Chang, Wong, Teo and Fam (1997) found WOFO a valid measure for the basic motivations to achieve in Singaporean Chinese. Based on this measure, our hypothesis two reads: The task-related dimension are better predictors of SOAM and the IOAM conceived and operationalized by Yang and Yu (1988).

Researchers who investigate the motivation to achieve across cultures sometimes question whether people in collectivist cultures have lower motivation to achieve (for instance, Sagie, Elizur, & Yamaguchi, 1996); or more specifically, whether people in cultures where the group is emphasized have the intrinsic task-related motivation to achieve. Mastery and work ethics have been identified as task-related dimensions of the basic motivation to achieve and competition, which involves social comparison, an ego-related or socially oriented dimension (Nicholls, Cheung, Thorkildsen, & Lauer, 1989). The combination of the task and the ego-oriented dimensions in WOFO reflects the contemporary American definition of success (Spence, 1985). The individually oriented motivation to achieve contains items that describe task-related activities; while the socially oriented motivation to achieve contains items that describe task-accomplishment with the assistance of and reference to others. We suggested that the IOAM is conceptually akin to the task oriented dimensions of the basic motive to achieve, while SOAM, since it involves self-other relationships, might be conceptually closer to the social oriented dimension — competition of WOFO. This argument is in line with recent literature on goal-directed behaviors of achievement motivation (Ames, 1992; Dweck, 1986; Nicholls, 1989). That the performance goal orientation, the goal for gaining high marks is an ego-related goal while the mastery or learning goal orientation, the goal to gain mastery is a task related goal.

The task related dimensions and the ego-related dimension of the basic motive to achieve was found to be related to goal orientation: Harackiewicz, Barron, Carter, Lehto and Elliot (1997) found that students' achievement related behaviors could be explained by the task-related dimensions in WOFO via the mastery goals while the grades obtained by the students could be explained by the ego-related dimension via the performance goals held by the students. We have recently identified a high positive correlation between SOAM with the performance goal orientation as well as a significant correlation between the individually oriented achievement motivation and the mastery goal orientation in a group of Singaporean junior college students (Chee & Chang, 2000). We think the pattern between goal conceptualizations and dimensions of the basic motive found by Harackiewicz et al. (1997) might apply in the present context. Hence, our hypothesis three reads: The task-related dimension are better predictors of IOAM. Hypothesis four reads: The ego-related dimension competition is a better predictor of SOAM. Summarizing the above theoretical arguments, we are proposing the following hypotheses:

1. Individually oriented achievement motivation (IOAM) and socially oriented achievement motivation (SOAM) positively correlate with each other.
2. Work and Family Orientation (WOFO) contributes to both IOAM and SOAM.
3. Task oriented subscals of WOFO, mastery and work ethics are better predictors of IOAM.
4. Ego oriented subscale of WOFO, competition is a better predictor of SOAM. And finally, the following causal model would be tested:
5. A dual path model in which the task-oriented motives of WOFO,
mastery and work ethics lead to IOAM which correlates with SOAM; the ego-oriented motive of WOFO, competition leads to both IOAM and SOAM (see Figure 1).

**Figure 1. Proposed Model of Mastery, Work Ethics, Competition and Individual-Oriented (IOAM) and Social-Oriented Achievement Motivation (SOAM)**

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**Method**

**Participants**

Two hundred and thirty secondary school students (55% females and 45% males, mean age = 16) participated in the study. The sample consisted mostly of Chinese, 87.8%, and Malays, 5.2%, Indians, 3.9% and and other races, Eurasians and Whites, 3%. The sample was randomly drawn from two neighbourhood schools in Singapore that serve students with average academic achievement. Analysis of variance was conducted to test if there were mean difference in major variables across races. Results indicated no significant differences. However since the explanations used in the study were drawn from the Chinese culture, with the exception of causal modelling where a large sample was required, only data obtained from the Chinese participants (N = 202) were used for analysis.

**Instruments**

Two instruments were used: (1) Work and Family Orientation Scale (Helmreich & Spence, 1978) (see Appendix 1) and (2) Individual-oriented and Social-oriented Achievement Motivation (Yang & Yu, 1988) (see Appendix 2).

The internal reliability of WOFO measured by Cronbach α was .84. The subscales of WOFO, mastery (8 items), work ethics (6 items) and competition (5 items) evidenced Cronbach αs of .62, .65 and .76 respectively.

Since the English translation of the SOAM/IOAM was used, efforts were extended to identify whether the translated scales measure the same constructs in Singapore. This was accomplished by conceptual sorting and factor analysis. Four National University students were randomly approached to sort out the sixty items into two categories according to the definition of the individually oriented achievement and the socially oriented achievement concepts advanced by Yang and Yu (1988). The conceptual sorting results corresponds to Yang and Yu’s assignment of items into the two scales (see Appendix 2). The internal reliability of IOAM with the original item assignment was found to be .85 and that of SOAM was found to be .81. Factor analysis with Varimax rotation was conducted to see if the original items contained in the SOAM and IOAM subscales load on the respective subscales. The results, with the two-factor-solution showed minimum cross-loading: only four items, out of the thirty items of SOAM loaded (with factor loading > .30) on Factor 1, identified as IOAM and two items of IOAM loaded on Factor 2, identified as SOAM (see Table 1). Since the objective of the present study is to test the relationship between WOFO and Yang and Yu’s conceptualization of IOAM and SOAM, analysis proceeded with the original subscales.

**Procedure**

The participants were administered the questionnaire containing both instruments by their respective classroom teachers.

**Data Analyses**

Simple correlations were calculated to test hypothesis 1; regression analyses were conducted to test hypothesis 2–4. Causal modelling via LISREL (Byrne, 1998) was carried out to test the proposed model.

**Results**

Descriptive statistics as well as correlations between the SOAM, IOAM and the subscales of WOFO, mastery, competitiveness, and work ethics are presented in Table 2. It is worth noting here that with paired t-test ($t = 23.70, df = 200, p < .00$), the Singaporean Chinese students showed higher levels of IOAM than SOAM.
Table 1. Two Factor Solution With Varimax Rotation of IOAM & SOAM Items for Chinese Singaporeans

<table>
<thead>
<tr>
<th>Component</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>Factor 2</td>
</tr>
<tr>
<td>Factor 1</td>
<td>Factor 2</td>
</tr>
<tr>
<td>Item</td>
<td>Item</td>
</tr>
<tr>
<td>IOAM15</td>
<td>.64</td>
</tr>
<tr>
<td>IOAM10</td>
<td>.58</td>
</tr>
<tr>
<td>IOAM3</td>
<td>.58</td>
</tr>
<tr>
<td>IOAM27</td>
<td>.53</td>
</tr>
<tr>
<td>SOAM24</td>
<td>.53</td>
</tr>
<tr>
<td>IOAM14</td>
<td>.53</td>
</tr>
<tr>
<td>IOAM9</td>
<td>.52</td>
</tr>
<tr>
<td>IOAM21</td>
<td>.52</td>
</tr>
<tr>
<td>IOAM6</td>
<td>.51</td>
</tr>
<tr>
<td>SOAM25</td>
<td>.50</td>
</tr>
<tr>
<td>SOAM26</td>
<td>.49</td>
</tr>
<tr>
<td>IOAM9</td>
<td>.49</td>
</tr>
<tr>
<td>IOAM4</td>
<td>.49</td>
</tr>
<tr>
<td>IOAM7</td>
<td>.49</td>
</tr>
<tr>
<td>SOAM17</td>
<td>.44</td>
</tr>
<tr>
<td>SOAM13</td>
<td>.44</td>
</tr>
<tr>
<td>IOAM20</td>
<td>.44</td>
</tr>
<tr>
<td>IOAM22</td>
<td>.43</td>
</tr>
<tr>
<td>IOAM12</td>
<td>.39</td>
</tr>
<tr>
<td>SOAM9</td>
<td>.39</td>
</tr>
<tr>
<td>IOAM30</td>
<td>.39</td>
</tr>
<tr>
<td>IOAM24</td>
<td>.38</td>
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<tr>
<td>IOAM5</td>
<td>.38</td>
</tr>
<tr>
<td>IOAM23</td>
<td>.36</td>
</tr>
<tr>
<td>SOAM15</td>
<td>.36</td>
</tr>
<tr>
<td>SOAM29*</td>
<td>.36</td>
</tr>
<tr>
<td>IOAM13</td>
<td>.34</td>
</tr>
<tr>
<td>IOAM25</td>
<td>.34</td>
</tr>
<tr>
<td>IOAM11</td>
<td>.34</td>
</tr>
</tbody>
</table>

Note. (1) Loadings of 0.30 and larger are underlined. (2) Items with loadings of 0.30 on both factors have been marked with an asterisk.

Table 2. Inter-Correlation and Means and Standard Deviations of the Achievement Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>IOAM</th>
<th>SOAM</th>
<th>WOFO</th>
<th>Competition</th>
<th>Mastery</th>
<th>Work Ethics</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOAM</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOAM</td>
<td>0.35**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WOFO</td>
<td>0.53**</td>
<td>0.2**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competition</td>
<td>0.28**</td>
<td>0.38**</td>
<td>0.71**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastery</td>
<td>0.31**</td>
<td>0.01</td>
<td>0.68**</td>
<td>0.23**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Ethics</td>
<td>0.41**</td>
<td>0.11</td>
<td>0.71**</td>
<td>0.17*</td>
<td>0.31**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Means and standard deviations were based on a 1-5 Likert scale for each item.

* p < 0.5. ** p < 0.1.

Simple Correlations

It can be seen that (1) IOAM and SOAM are positively correlated with each other as predicted in hypothesis 1, r = .39, p < .001; (2) both IOAM and SOAM correlated positively with WOFO, for IOAM r = .48, p < .001; for SOAM r = .24, p < .01. Hypothesis 2 was confirmed; (3) task related subscales of WOFO correlated positively with IOAM, for mastery r = .31, p < .001; for work ethics r = .41, p < .001; These task related subscales had no significant correlations with SOAM, for mastery r = .03, n. s., for work ethics, r = .10, n. s.; (4) the ego-related subscale of WOFO, competition correlated positively with SOAM, r = .37, p < .001, as well as with IOAM to a lesser degree, r = .28, p < .01.

Regression Analyses

Predicting IOAM from WOFO. The three components of WOFO in combination were found to significantly predict IOAM, R² = .24, F (3, 188) = 19.95, p < .00. Next, we examined the independent contribution made by each dimension of WOFO by evaluating the partial correlation, pr, of each dimension after the other dimensions were partialled out. We found that all three dimensions of WOFO were significant predictors of IOAM. However, mastery, with pr = .26, B = 1.03, p = .00 and work ethics, with pr = .33, B = 1.91, p = .00, were better predictors, while competition with pr = .15, B = .96, p = .01, did not account for as much variance in the IOAM as the task related dimensions of WOFO.

Predicting SOAM from WOFO. We conducted multiple regression
analysis using mastery, work ethics and competition as predictors of SOAM and evaluated the partial correlation, pr, of each predictor. The components of WOFO combined were found to predict SOAM with $R^2 = .16$, $F(3, 188) = 8.75$, $p < .001$. Examination of partial correlations showed that competition emerged as the more significant predictor of SOAM with $B = 2.41$, $\beta = .40$, $p < .001$, and a pr of .32.

It is interesting to review the effects of the two task-related motives: for mastery $B = -.50$, $\beta = -.09$, $p = .20$, n.s.; for work ethics, $B = .49$, $\beta = .09$, $pr = -.032$, $p = .22$, n.s. It is worth noting the contributions made by work ethics was non-significant; the contribution made by mastery to SOAM was negative and non-significant.

### Structural Equation Modelling

A two-path model was proposed in which the task oriented components of WOFO, mastery and work ethics contributed to IOAM while the ego-oriented component, competition contributed to IOAM as well as SOAM. IOAM and SOAM were hypothesized to be correlated. In conducting this analysis since a large sample size was required and because ANOVA did not indicate significant differences between variables across different races, all data were included in the analysis. Indices were created, by group items in such as way that the items with highest loadings were parcelled with items with the lowest loadings; therefore items with loadings representative of each factor were represented in each parcel. These indices, or parcels, were used for model fitting with LISREL (Bentler, 1980).

This model fit the data reasonably well; however the path from competition leading to IOAM was not significant. We modified the model by dropping the path. LISREL analysis of the modified model showed a slightly better fit (see Table 3).

### Table 3. Fit Indices for Model Comparison

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2_{diff}$</th>
<th>GFI</th>
<th>AGFI</th>
<th>RMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Including Competition to IOAM path</td>
<td>384.37$^c_{216}$</td>
<td>0.87</td>
<td>0.8333</td>
<td>0.08</td>
</tr>
<tr>
<td>2. Excluding Competition to IOAM path</td>
<td>384.83$^c_{217}$</td>
<td>0.87</td>
<td>0.8341</td>
<td>0.08</td>
</tr>
</tbody>
</table>

*Note. GFI = goodness of fit index; AGFI = adjusted goodness of fit; RMR = Root Mean Square Residual.

This model accounted for the following: Mastery and work ethics accounted for 47.52% of the total variance in the IOAM while competition explained 7.41% of the variance in SOAM. We noted that IOAM and competition together explained 15.27% of the variance in SOAM. The analysis revealed that mastery and work ethics significantly contributed to IOAM and competition contributed to SOAM because of the significant positive correlation between mastery and IOAM ($\beta = .70$, $p < .01$), between work ethics and IOAM ($\beta = .16$, $p < .1$), and between competition and SOAM ($\beta = .28$, $p < .01$).

Furthermore, IOAM correlated positively with SOAM ($r = .28$, $p < .01$). The two-path-to-success model was thus empirically supported (see Figures 2 and 3).

### Discussion

In the present study, we aimed at expanding the dichotomized model of Chinese motivation to achieve (Yang & Yu, 1988) by identifying a dual path model of the achievement process for the Chinese: the task-
Figure 3. Final Model Between Mastery, Work Ethics, Competition and Individual-Oriented (IOAM) and Social-Orientated Achievement Motivation (SOAM)

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person-related paths to achievement goals. We proposed that the individual-oriented and social-oriented dichotomy should be investigated in the context of the Chinese definition of success or achievement goals. The dual path process could also be seen as the way in which the Chinese attempt to resolve the tension between the fundamental human concerns for task mastery and human relatedness (Bakan, 1966).

We found that the task and ego-related dimensions of WOFO seemed to find their conceptual correlates in the individual-oriented and the social-oriented dimensions of Yang and Yu’s (1988) Chinese achievement model. The positive correlations between mastery, work ethics and IOAM and that between competition and SOAM supported the notion of dual paths-two action scripts leading towards the Chinese achievement goals or success. The close relationship between IOAM and WOFO suggested that the nature of individually oriented motivation to achieve might be a manifestation of the basic need for mastery.

The only connection between the basic motive to achieve and SOAM was competition — the desire for performance excellence measured by

normative standards and relative standing within a cohort. This led us to conclude that SOAM may not be a task oriented motivation; SOAM may modify the direction of achievement behaviors and is guided by the performance — ego/social relationship related goal orientation; but by itself, SOAM is not a quest for competence per se.

The students we surveyed showed significantly higher IOAM than SOAM. This suggested a sense of primacy of mastery and competence in the Chinese achievement orientation, albeit with the intertwined pursuit for social recognition.

A test to independently evaluate the intrinsic motivation to achieve would be to conduct achievement studies where the social sanction is no longer relevant, for instance, self-selected activities such as in hobbies and amateur research and writings. High levels of interests and persistence in these non-socially sanctioned activities would indicate high levels of intrinsic, task oriented motivations in the individual. We are currently conducting a study designed on the basis of this argument to assess the intrinsic versus extrinsic motivations in Singaporean secondary school students.

The combined results in the present study seem to suggest that there might be two different paths via which success is attained in the Chinese community: a task related path and an ego social related path. These findings are in line with the recent literature on goal conceptualizations (Ames, 1992), definition of success (Nicholls et al., 1989) and achievement related behaviors. The task- and ego-dichotomy in goal conceptualisation has been investigated via the task-related dimensions and ego-related dimension, competition, of WOFO; similar to our findings, the learning goal was found to be related to mastery and work ethics and the performance goals, found to be related to the ego-related dimension, competition, of WOFO in studies conducted in American college settings (Harackiewicz et al., 1997). Therefore, Yang and Yu’s (1988) social-orientation and individual-orientation could be considered as tendencies toward success influenced by the learning and the performance goal conceptualisations toward socially constructed meaning of achievement goals within the Chinese context. Reviewing Harackiewicz’s and colleagues’s studies (Harackiewicz & Barron, 1998; Harackiewicz et al., 1997), we also proposed this dual process model is not limited to the Chinese but might be applicable to any learning situations where the goal, such as academic learning, may be conceptualized as serving both the task oriented as well as the social oriented needs.
The competition dimension of WOFO explained only a small portion of the variance in SOAM, leaving room for speculations that there might be other important factors that contributed to SOAM, for instance, the affiliative or the power motive. It is proposed that further research in Chinese motivation to achieve should include the motivation for affiliation and for power for a conceptually more comprehensive understanding of the Chinese socially-oriented tendency to achieve success.

Notes

1. Though we had hypothesized that competition is conceptually related more to SOAM, we felt that competition, a motive that serves the individual, might also be empirically related to IOAM, the individually oriented motivation to achieve, albeit to a lesser extent.

2. In conducting structural equation modeling, when the original scales are long, indices are sometimes constructed by "parcelling" items belonging to the same factor, in order to reduce the data. In this analysis, four indices were constructed for IOAM, five for SOAM, four for mastery, four for competition; the original six items of subscale work ethics were used without indexing.

References


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### Appendix 1

#### Work & Family Orientation

##### Competition

I enjoy working in situations involving competition with others. It is important to me to perform better than others on a task. I feel that winning is important in both work and games. It annoys me when other people perform better than I do. I try harder when I am in competition with other people.

##### Mastery

I would rather do something at which I feel confident and relaxed than something which is challenging and difficult. When a group I belong to plans an activity, I would rather direct it myself than just help out and have someone else organize it. I would rather learn fun and easy games than difficult thought games. If I am not good at something, I would rather keep struggling to master it than move on to something I may be good at. Once I undertake a task, I persist. I prefer to work in situations that require a high level of skill. I more often attempt tasks that I am not sure I can do than tasks that I believe I can do. I like to be busy all the time.

##### Work Ethics

It is important for me to do my work as well as I can even if it isn't popular with my co-workers. I find satisfaction in working as well as I can. There if satisfaction in a job well done. I find satisfaction in exceeding my previous performance even if I don't outperform others. I like to work hard. Part of my enjoyment in doing things is improving my past performance.
Appendix 2
Individual-Oriented and Social-Oriented Motivation Scale*

Socially Oriented Achievement Motivation
1. In order not to disappoint my parents, I always try to do what they expected.
2. Why I study hard is because only by studying hard I could have a better future.
3. I study hard because teachers usually praise the students who study hard.
4. I often think whether my current performance has reached my parents’ standards.
5. I always work twice as hard/double hard in order to reach the expectation and achievement standard set by my parents.
6. The main goal in life for me is to do the things that will make my parents proud.
7. While doing homework, I often think what might be the standards set by the teacher.
8. In order to gain high marks, I always follow the methods of studying set by the teacher.
9. If I cannot do better than others I would feel that I couldn’t face my elders.
10. Whether a job is done or not is usually determined by my parents or my teachers.
11. Before I do anything, I would first consider whether my own goal fits my parent’s expectations.
12. I always wish to achieve the goals set in my parent’s mind.
13. While working, I always require myself to perform according to the same standards used by my friends.
14. I would worry about my own achievement, if I find my classmates perform better than I.
15. When I receive an assignment from my teacher, I usually try my best to do it well in order to impress my teacher.
16. When teachers praise other classmates, I feel that I should work harder.

Individually Oriented Achievement Motivation
1. No matter how difficult the task is, I would try my best to do it, if I think it is worthwhile to do.
2. While working, I always keep on trying until I am satisfied.
3. Even if no one were around, I would still complete whatever I started.
4. I usually think whether my present performance has reached my own standards.
5. If I meet obstacles while working, I would usually try to solve it with different means based on my own judgment.
6. I like to work because work itself gives me meaning in life.
7. After finishing a job, I like to evaluate it according to my own standards.
8. I often set high standards for myself when I am working.
9. What goals I pursue in life are determined by me.
10. The reason why I like studying is because of the knowledge I gain from learning.

*The English translation was provided by A. B. Yu, Academia Sinica, Taiwan, author of the original version in Chinese; minor modifications were made for use in Singapore.
11. I am willing to constantly working hard in order to reach personal success.
12. I usually examine my own performance in an examination, when I do not have the test results, in order to improve myself.
13. I feel a sense of achievement when I complete a job, even if no one else knows.
14. No matter what other people might think, I will try my best to do what I consider valuable.
15. I get satisfaction from completing a job; the reward that comes with it is secondary to me.
16. It pleases me most when I can make progress in school based on my own goals of self-improvement.
17. I have a very clear standard on how to evaluate my own performance when I finish a task.
18. I usually choose to do what I really want to do.
19. To attain high level of education is not for glorification of my ancestors but for my own knowledge and interests.
20. I feel bad about myself when I cannot reach the goals I set for myself at work.
21. The standards I set for myself are often higher than those expected of me by others.
22. I really like learning; test results to me are secondary.
23. I usually follow my own studying methods in order to obtain better marks.
24. Working itself is fun; I am willing to work on anything that is meaningful to me.
25. I always stay up late in order to finish a job I like.
26. I am very clear about how much effort to put in a job in order to reach my goals.
27. After finishing a job, I can usually judge what my performance might be.
28. Whether a person has high or low achievement should be judged by himself.
29. When I do not get the marks I desired, even if my parents and teachers do not scold me, I would feel bad.